

**ABSTRACT**

A method of producing nano metal fluoride powders comprising the steps of mixing an aqueous or organic continuous phase comprising at least one metal cation salt with a hydrophilic or organic polymeric disperse phase forming a metal cation salt/polymer gel and then treating said gel with anhydrous hydrofluoric acid to convert said metal cation salt to metal cation fluoride and heat treating the gel at a temperature sufficient to drive off water and/or organics within the gel, leaving a residue of nano-size metal fluoride powder.